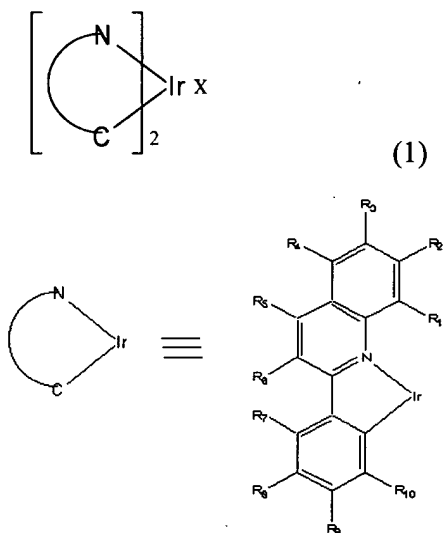


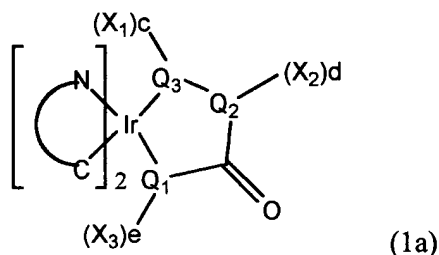
**WHAT IS CLAIMED IS:**

1. A compound having the formula (1):



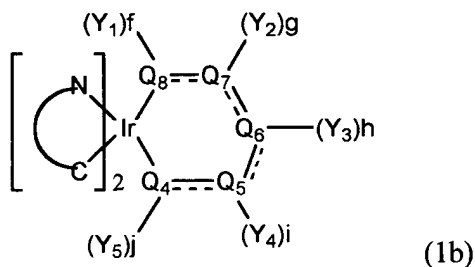
where  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ , and  $R_{10}$  are independently selected from the group consisting of a C1-C30 alkyl group, a substituted C1-C30 alkyl group, a C2-C20 alkenyl group, a substituted C2-C20 alkenyl group, a C1-C20 alkoxy group, a substituted C1-C20 alkoxy group, a C6-C30 aryl group, a substituted C6-C30 aryl group, a C6-C30 fused aromatic ring, a substituted C6-C30 fused aromatic ring, a substituted or unsubstituted C6-C30 arylalkyl group, a C6-C30 arylalkyl group, a substituted C6-C30 aryloxy group, a C2-C30 heteroaryl group, a substituted C2-C30 heteroaryl group, a C2-C30 heteroarylalkyl group, a substituted C2-C30 heteroarylalkyl group, a C2-C30 heteroaryloxy group, a substituted C2-C30 heteroaryloxy group, a C5-C20 cycloalkyl group, a substituted C5-C20 cycloalkyl group, a C2-C20 heterocycloalkyl group, a substituted C2-C20 heterocycloalkyl group, a halogen atom, and a cyano group, and X is a bidentate ligand.

2. The compound of claim 1, having the formulae (1a):



where Q<sub>1</sub>, Q<sub>2</sub>, and Q<sub>3</sub> are independently selected from the group consisting of carbon (C), oxygen (O), nitrogen (N), and sulfur (S); X<sub>1</sub>, X<sub>2</sub>, and X<sub>3</sub> are independently selected from the group consisting of hydrogen, a C1-C30 alkyl group, a substituted C1-C30 alkyl group, a C2-C20 alkenyl group, a substituted C2-C20 alkenyl group, a C1-C20 alkoxy group, a substituted C1-C20 alkoxy group, a C6-C30 aryl group, a substituted C6-C30 aryl group, a C6-C30 fused aromatic ring, a substituted C6-C30 fused aromatic ring, a substituted or unsubstituted C6-C30 arylalkyl group, a C6-C30 arylalkyl group, a substituted C6-C30 aryloxy group, a C2-C30 heteroaryl group, a substituted C2-C30 heteroaryl group, a C2-C30 heteroarylalkyl group, a substituted C2-C30 heteroarylalkyl group, a C2-C30 heteroaryloxy group, a substituted C2-C30 heteroaryloxy group, a C5-C20 cycloalkyl group, a substituted C5-C20 cycloalkyl group, a C2-C20 heterocycloalkyl group, a substituted C2-C20 heterocycloalkyl group, a halogen atom, and a cyano group; and c, d, and e are independently 0, 1, or 2, wherein X<sub>1</sub> and X<sub>2</sub> are combined together to form a cyclic system.

3. The compound of claim 1, having the formulae (1b):

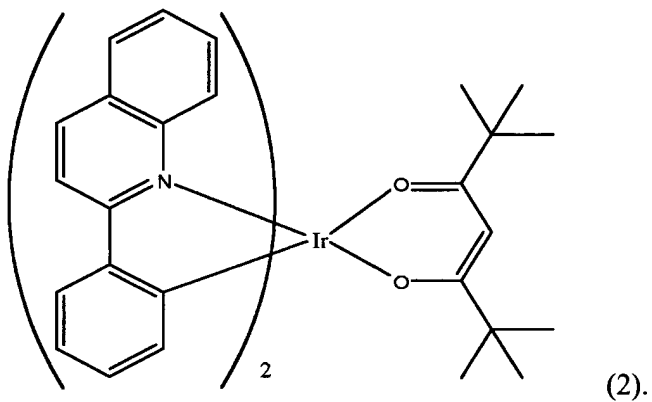


where  $Q_4$ ,  $Q_5$ ,  $Q_6$ ,  $Q_7$ ,  $Q_8$ , and  $Q_9$  are independently selected from the group consisting of carbon (C), oxygen (O), nitrogen (N), and sulfur (S);  $Y_1$ ,  $Y_2$ ,  $Y_3$ ,  $Y_4$ , and  $Y_5$  are independently selected from the group consisting of hydrogen, a C1-C30 alkyl group, a substituted C1-C30 alkyl group, a C2-C20 alkenyl group, a substituted C2-C20 alkenyl group, a C1-C20 alkoxy group, a substituted C1-C20 alkoxy group, a C6-C30 aryl group, a substituted C6-C30 aryl group, a C6-C30 fused aromatic ring, a substituted C6-C30 fused aromatic ring, a substituted or unsubstituted C6-C30 arylalkyl group, a C6-C30 arylalkyl group, a substituted C6-C30 aryloxy group, a C2-C30 heteroaryl group, a substituted C2-C30 heteroaryl group, a C2-C30 heteroarylalkyl group, a substituted C2-C30 heteroarylalkyl group, a C2-C30 heteroaryloxy group, a substituted C2-C30 heteroaryloxy group, a C5-C20 cycloalkyl group, a substituted C5-C20 cycloalkyl group, a C2-C20 heterocycloalkyl group, a substituted C2-C20 heterocycloalkyl group, a halogen atom, and a cyano group; and  $f$ ,  $g$ ,  $h$ ,  $i$ , and  $j$  are independently 0, 1, or 2, wherein two of the groups  $Y_1$  through  $Y_5$  are combined together to form a cyclic system.

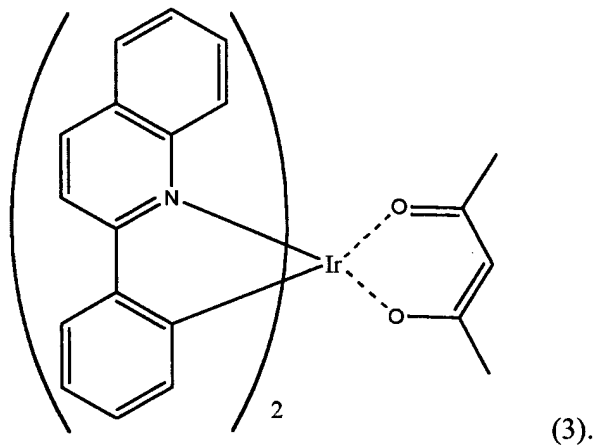
4. The compound of claim 1, wherein X in said formula (1) is selected from the group consisting of acetylacetonate, hexafluoroacetylacetonate, salicylidene, picolinate,

- 3 8-hydroxyquinolate, α-amino acid L-proline, benzoylacetone, dibenzoylmethane,  
4 tetramethylheptanedione, and 1-(2-hydroxyphenyl)pyrazolate.

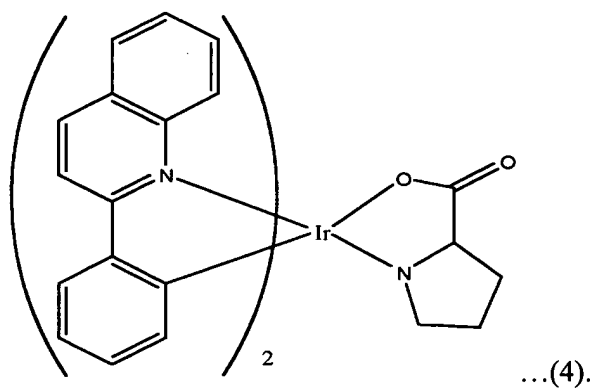
- 1 5. The compound of claim 1, having the formula (2):



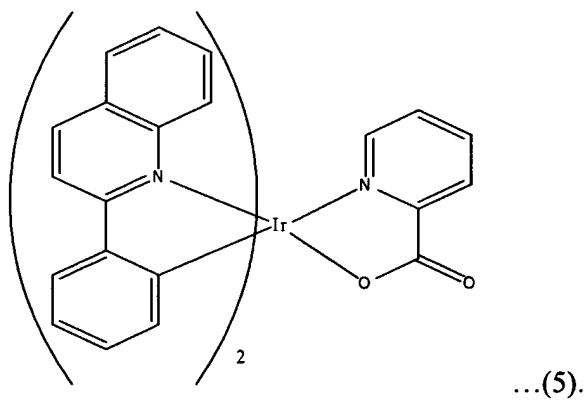
- 1 6. The compound of claim 1, having the formula (3):



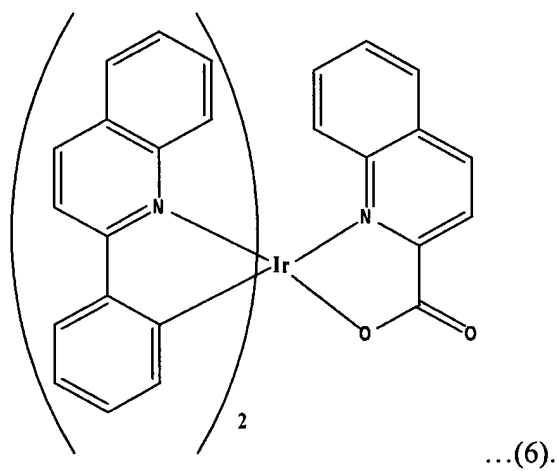
- 1 7. The compound of claim 1, having the formula (4):



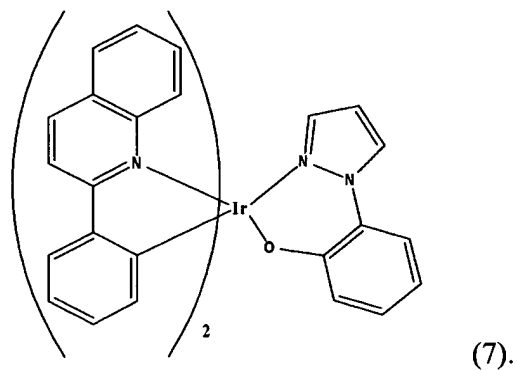
- 1      8.      The compound of claim 1, having the formula (5):



- 1      9.      The compound of claim 1, having the formula (6):



- 1      10.      The compound of claim 1, having the formulae (7):



- 1            11.    The compound of claim 1, wherein X in said formula (1) is the bidentate  
2    ligand expressed as:



- 1            12.    An organic electroluminescent device comprising an organic layer between a  
2    pair of electrodes, the organic layer containing the compound of said formula (1) according to  
3    claim 1.

- 1            13.    The organic electroluminescent device of claim 12, wherein the organic layer  
2    is an emissive layer.

- 1            14.    An image display device using the compound of said formula (1) according to  
2    claim 1.